APPENDIX B
Contractor Laboratory Electronic Data Deliverable Specifications

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1.1 Electronic Deliverables. The Contractor shall provide all analytical results in electronic form delivered by double-sided high-density floppy disks. The electronic files must follow the structure and format defined in this article. Electronic deliverables shall consist of results reported by hardcopy and shall be provided no later than 45 working days after sample receipt. Each electronic deliverable will be accompanied by a cover letter indicating which samples and respective package identifications are included.

All electronic files will be audited by the Contracting Officer Representative (COR) to determine if the specifications in this article have been followed. If a file format or structure does not meet specifications the Contracting Officer Representative may request a complete resubmittal at no costs to the Government. Upon reviewing the electronic file, the Contracting Officer Representative may also require a resubmittal based on inconsistencies (hereafter referred to as an "error") with codes, spelling or omissions as specified in the Field Descriptions below. Resubmittals due to errors shall consist only of the error record(s) identified by the Contracting Officer Representative at no costs to the Government. The initial submission of the resubmittals shall be received by the Government no later than 14 days from the time the Contractor is notified by the COR. After initial submission, resubmittals shall be received no later than 7 working days from the time the Contractor is notified by the COR.

1.1.1 File Contents
Electronic deliverables shall consist of results reported on hardcopy. The file shall include analytical results for the primary and duplicate environmental samples, surrogate spikes, matrix spikes (MS), matrix spike duplicates (MSD),re-analyses, dilutions, serial dilution results.

1.1.2 File Type and Format
The file type shall be one of the following: Microsoft Excel 5.0 or earlier, Microsoft ACCESS 2.0, dBASE or other DBF types, ASCII tab-delimited, or ASCII comma-delimited with text in quotes. All fields identified below must be included in the file in the exact order shown. In addition, column headings must be the same as below. Some fields, as identified, may not be required to be populated and may be left blank or null.

Analytical Data Table

Table 1 and the following field descriptions relate to the analytical data table structure and content.

Field Descriptions

Field Sample Number - The sample identification number as reported on the chain-of-custody form and sample labels. This field is also used for the laboratory quality control (QC) sample identification. No modifications or additions from field labels are allowed in any form unless specified by the sampling personnel. Laboratory QC samples must be unique for any combination of Physical State + Sample Type + Package. Laboratory QC samples IDs may be identical to the Laboratory Internal ID below.

Laboratory Internal ID - The laboratory's internal identification number.

Package - An identifier that allows correlation of electronic results to hardcopy results. A package contains a set of field sample results and all associated laboratory QC results. A Package is similar to sample delivery groups (SDG), job number, or sample batch.

Table 1. Analytical Data Table Structure

Field	Name	Type	Data Required (1)
Field Sample Number	FIELD_NUM	Text	Yes
Laboratory Internal ID	LABID	Text	Yes
Package	PACKAGE	Text	Yes
Analysis	ANALYSIS	Text	Yes
Analysis_Level	ANAL_LEVEL	Text	Yes
Method	METHOD	Text	Yes
Cleanup	CLEANUP	Boolean	Yes
Physical State	STATE	Text	Yes
Basis	BASIS	Text	No
Preparation Method	PREP_METH	Text	No
Preparation Date	PREP_DATE	Date (2)	No
Date Extracted	EXTRACT	Date (2)	Yes (3)
Analysis Date	ANAL_DATE	Date (2)	Yes
Analysis Time	ANAL_TIME	Time	No
Dilution Factor	DILUTION	Number	Yes (4)
Sample Quantity	SMPL_QTY	Text	No
Quantity Units	QTY_UNITS	Text	No
Moisture	MOISTURE	Number	No (4)
Compound	COMPOUND	Text	Yes
CAS Number	CAS_NUMBER	Text	No
Result	RESULT	Number	Yes (4)
Qualifier	QUALIFIERS	Text	Yes (3)
Units	UNITS	Text	Yes
MDL	MDL	Number	Yes (4)
PQL	PQL	Number	Yes (4)
Result Order	RES_ORDER	Text	Yes
Sample Type	SAMP_TYPE	Text	Yes
Surrogate	SURROGATE	Boolean	Yes
Spike	SPIKE	Number	Yes (3) (4)
Recovery	RECOVERY	Number	Yes (3) (4)
QC Batch Identifier	QC_BATCH	Text	No
Relative Percent Difference	RPD	Number	Yes (4)

(1) A "Yes" means the field must contain some information and a null or empty cell is not acceptable, except those with a footnote of (3).
(2) Dates appear in the format MM/DD/YY. Time appears in military time as HH:MM:SS.
(3) This field may contain a null value if appropriate, however, a null does not represent a lack of information., rather, a null indicates some meaning (i.e., a null in Qualifier indicates a detected result).
(4) For DBF files this field type should be text.

Analysis - The analysis class the analytical method belongs to (e.g., Dissolved Metals, Total Metals, Volatiles). One of the following codes must be used for each record:

VOLATILE ORGANICS
SEMI-VOLATILES (BNA)

In the event an Analysis code is not supplied, the Contractor should attempt to contact the Contracting Officer Representative or use best professional judgment.

Analysis Level - The level of analysis. A null or blank value is not acceptable. One of the following codes must be used: LOW, MEDIUM, HIGH, or NA for not applicable.

Method - Indicates the analytical method used (e.g., SW-846 8240). A null or blank value is not acceptable. Do not use codes with multiple methods (e.g., EPA 624/8240). This information, combined with the Analysis, indicates the type of analysis performed (i.e., Dissolved Metals) and the analytical procedure used for detection and quantitation (SW-846 6010A). One of the following codes must be used for each record:

SW-846 8260
SW-846 8270A

In the event a Method code is not supplied or does not match the above list, the Contractor should attempt to contact the Contracting Officer Representative or use best professional judgment.

Cleanup - If pre-analysis cleanup is performed, indicate with a boolean response (Y, N, T, or F). If cleanup is not applicable or the information is not available the default value is FALSE.

Physical State - This field must contain one of the following codes for the medium analyzed: SOLID, LIQUID, or GAS. In general, sludges should be considered a solid. If a sample or laboratory QC material does not match one of these, please indicate with a code of X and specify in the cover letter.

Basis - Indicates whether results are reported on a dry weight or wet weight basis. Only applies to records with a Physical_State = 'SOLID'. If the Physical_State does not equal 'SOLID', then a null or blank value is expected. Valid Codes for this field are:

Code	Description
W	Wet Weight
D	Dry Weight
NA	Not Applicable

Preparation Method - Method of sample preparation or extractions (such as digestions). If a preparation or extraction process is not performed the field should contain the value ‘NA’ for not applicable.

Preparation Date - Date the sample was prepared.

Date Extracted - Date the sample was extracted. If an extraction is not applicable this field should be filled from the Analysis Date. A null value is not acceptable.

Analysis Date - The date the sample was analyzed.

Analysis Time - The time the sample was analyzed.

Dilution Factor - The dilution factor. This should also reflect "effective" dilutions achieved by increasing or decreasing sample or extracting solvent volumes or sample aliquots from standard amounts. A null value is not acceptable.

Sample Quantity - Quantity or weight of the sample used for analysis.

Quantity Units - The units of measure for the sample quantity used for analysis.

Moisture - Moisture content of solid samples. This field is populated when Physical_State = 'SOLID'. If the Physical_State does not equal 'SOLID', then a null or blank value is expected.

Compound - Analyte or parameter analyzed. Only the compound should be reported. Qualifiers and other information regarding the analysis (such as dissolved metals) or analytical method must not be included. Compounds can be reported in upper or lower case.

CAS Number - Chemical Abstract Services Registry Number of the reported compound. Not a required field, however this information will streamline the assimilation of the data.

Result - The concentration, value, or result of the compound tested reported to the correct number of significant figures. The practical quantitation limit (PQL) will be reported in this field for non-detect values. Only numbers are acceptable in this field, and in the case of spiked results, the value will be the spiked sample result not adjusted for the original sample result. Percent recoveries for spike results are not acceptable in this field (see Recovery below).

Qualifier - Data qualifiers. Qualifier codes used in this field must be from either the *Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration, Document OLM01.0 through revision OLM01.8 (EPA, August 1991)* or *Statement of Work for Inorganics Analysis, Multi-Media, Multi-Concentration, Document ILM02.0 with revision ILM02.1 (EPA, September 1991)*. More than one qualifier may be used per record. All non-detect results shall be reported with a **U** qualifier. The qualification of **ND** for non-detect results is unacceptable. Null values are acceptable and imply that the reported result is a detection. If a range will be reported (e.g., greater than 50) the symbol " > " may be reported in this field.

Units - The units of measure (e.g., mg/L) for the result.

MDL - The Method Detection Limit. A null value is not acceptable.

PQL - The Practical Quantitation Limit. For particular compounds/analyses, (such as pH), the PQL can be zero. Note that this value should equal the Result when the result is a non-detect.

Result Order - This field is used for identifying the order of results for compounds reported more than once. This field distinguishes valid "duplication" of results including re-analyses, dilutions, laboratory replicates, and confirmation results. This field applies to all samples, including laboratory QC sample information. One of the following codes must be used for each record.

RESULT ORDER CODES	
CODE	DESCRIPTION
2C	Second column confirmation
CONV	Converted Value
D1	First serial dilution
D2	Second serial dilution
D3	Third serial dilution
D4	Fourth serial dilution
D5	Fifth serial dilution
DP	Duplicate (laboratory replicate)
GC	GC/MS confirmation
HPLC	HPLC confirmation
P1	Primary Result
RE	Re-analysis
T1	TIC 1
T10	TIC 10
T2	TIC 2
T3	TIC 3
T4	TIC 4
T5	TIC 5
T6	TIC 6
T7	TIC 7
T8	TIC 8
T9	TIC 9

Sample Type - This field is used to identify environmental samples versus laboratory QC generated samples. One of the following codes must be used to identify the sample type:

SAMPLE TYPE CODES	
CODE	DESCRIPTION
CC1	First Continuing Calibration
CC2	Second Continuing Calibration
CC3	Third Continuing Calibration
CCB	Continuing calibration blank
CCG	Continuing Calibration, Regression (any type)
CCR	Continuing Calibration, Average response factor
CCX	Continuing Calibration, Other
CMS	Confidential Sample Matrix Spike
CMSD	Confidential Sample Matrix Spike
CS	Calibration standard
CV	Calibration verification
ENV	Environmental Sample
ICB	Initial Calibration Blank
ICL	Initial Calibration, Linear regression with y-intercept
ICLZ	Initial Calibration, Linear regression forced through zero.
ICQ	Initial Calibration, Quadratic regression with y intercept
ICQZ	Initial Calibration, Quadratic regression forced through zero.
ICR	Initial Calibration, Average Response factor calibration.
ICX	Other initial calibration
LCS	Laboratory Control Sample or Spike
LCSD	Laboratory Control Sample or Spike Duplicate
MB	Method Blank
MS	Matrix spike
MSD	Matrix Spike Duplicate
RB	Reagent Blank
RS	Reference Standard

Surrogate - This field is used to identify surrogate spike results. This field receives a boolean response (Y, N, T, or F) and is true for surrogate spike compounds or false if not a surrogate.

Spike - This refers to the spike concentration for spiked results. Units of measure are implied from the Units field. If spiked compounds such as surrogates are diluted beyond detection then the practical quantitation limit (PQL) shall be reported in the Result field and a **U** will be added in the Qualifier field. A null value is acceptable, indicating a non-spiked result, however, if the Sample Type = MS, MSD, LCS, or LCSD or the field Surrogate = true, a spike amount must be reported. Conversely, if a spike amount is reported the Sample Type or Surrogate column must be correctly coded.

Recovery - Percent (%) recovery of spiked results. A null value is acceptable, indicating a non-spiked result, however, if Surrogate = 'Y', Internal_Standard = 'Y', or if the Sample Type = MS, MSD, LCS, or LCSD a percent recovery must be reported. In the case of calibration standards, the Recovery field receives different QC Calculations (such as the coefficient of regression (R2), or Relative Standard Deviation.

QC Batch Identifier - A code or identifier used to correlate laboratory QC results to the field samples, as determined by the laboratory.

RPD - The relative percent difference for duplicate results. A null value is acceptable and the RPD should only be reported for duplicate results such as MSDs and LCSDs.

1.1.3 Acceptance Criteria. If the Contractor deems it necessary to assign a code or result to a record that does not meet these specifications, the Contractor must notify the Contracting Officer Representative for approval prior to final submittal. Indicate any approved deviations in a cover letter.

The Contracting Officer Representative will review all deliverable packages for clerical and transcription errors. Random checks of an appropriate sample size will be performed to ensure correspondence between hardcopy and electronic results. Electronic files will be audited electronically to determine correctness based upon format and criteria described above. It is the responsibility of the Contractor to fully understand and meet the requirements of the Electronic Data Deliverable. Contractor should contact the Contracting Officer Representative if clarification is needed. If the final deliverable package is determined to be of an unacceptable quality level, the package will be returned in part or entirety to Contractor for corrections at no cost to the Government.